

Outcome Of Laproscopic Pyeloplasty In Pujobstruction

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Abstract: Laparoscopic pyeloplasty is a first-line option for the management of ureteropelvic junction obstruction. We evaluated various presentations and therapeutic modalities for ureteropelvic junction obstruction and their outcomes in our department. All patients who underwent pyeloplasty recovered uneventfully except three who developed prolonged extravasation of urine. One patient developed wound infection. Average hospital stay was 12 days. Follow up studies showed good renal function on the side of pyeloplasty in 21 cases. Hence, Laparoscopic pyeloplasty is feasible in normal and difficult ureteropelvic junction abnormalities.

Keywords: Laparoscopic pyeloplasty, ureteropelvic junction obstruction.

I. Introduction

There has been a mounting rise in the incidence of pelviureteric junction obstruction over the past few decades and recent changes in the trends of its investigation and management. Pelviureteric junction obstruction often presents as a urological emergency and can lead to dangerous consequences if not intervened at the right time. Pelviureteric junction obstruction can also occur due to abdominal malignancies like carcinoma colon, retroperitoneal tumors, carcinoma cervix in females and other malignancies. Early evaluation, diagnosis and proper intervention at the right time can prevent the fatal consequences of pelviureteric junction obstruction.

Despite many invasive, non invasive and laparoscopic procedures available at present to treat pelviureteric junction obstruction, the proposed benefits of these various procedures remains unproven.

II. Objectives

- 1) To identify different modes of presentation of pelviureteric junction obstruction.
- 2) To evaluate the various therapeutic modalities available for the management of pelviureteric junction obstruction.
- 3) To study the outcome of various modalities of management

III. Materials And Methods

Source Of Data

Data will be collected through a prescribed proforma from among the patients admitted in Department of Urology, Stanley Medical College, with pelviureteric junction obstruction during the period January 2013 to February 2014

Method Of Collection Of Data

Sample Size

The incidence of pelviureteric junction obstruction occurs nearly 1 in 500 to 1 in 1250 live births. Considering the above incidence with 95% confidence limits and 3% permissible error, sample size works out to be 100 cases. However this being a time bound study (from January 2013 to February 2014, all the patients admitted with pelviureteric junction obstruction to urological wards during this period will be taken for the study.

Inclusion Criteria

All cases of both sexes and any age with pelviureteric junction obstruction which is proved either by

- 1) Ultrasonogram or
- 2) Intravenous pyelogram

Exclusion Criteria

Pelviureteric junction obstruction occurring as a result of

- 1) Renal malignancy

- 2) Other malignancies encroaching upon the renal system.

IV. Observation And Results

A total of 25 patients (10 male and 15 female) were managed. The age of patients ranged from 13 years to 25 years (mean 16.4 years). Left side was involved in 10 patients, right side in 15 patients and 1 patient had bilateral pelvi-ureteric junction obstruction. The clinical presentations were abdominal mass, pain abdomen and urinary symptoms. Twenty two patients underwent laproscopicpyeloplasty while nephrectomy was done in 3 cases. All patients who underwent pyeloplasty recovered uneventfully except 1 who developed prolonged extravasation of urine. One patient developed wound infection. Average hospital stay was 12 days. Follow up studies showed good renal function on the side of pyeloplasty in 21 cases. Pelvi-ureteric junction is a common site of obstruction in the upper urinary tract. Post operative recovery of renal function is achieved in majority of patients using Anderson-Hynes pyeloplasty

Period Of Follow-Up:

The patients are followed up for a period of 1 year at regular intervals.

Open pyeloplasty is the gold standard treatment for adult ureteropelvic junction obstruction (UPJO) with published success rates over 90%. In the recent years the management of UPJO has been revolutionized by the introduction of endoscopic procedures and laparoscopic techniques. They analyzed the long term results of endoscopic and other minimal access approaches for the treatment of UPJO.

Early results for endopyelotomy were promising but long term results were not encouraging. Laparoscopic pyeloplasty technique is well defined and duplicates the surgical principles of open pyeloplasty. With such a large variety of minimally invasive procedures for the treatment of UPJO available, the treatment choice for UPJO must be based on the success and morbidity of the procedures, the surgeon's experience, the cost of the treatment, and the patient's choice. They feel that with the technological advancements in instrumentation coupled with a decrease in cost and improved training of urological surgeons, laparoscopic pyeloplasty may evolve to be the new "gold" standard for the treatment of UPJO.

V. Discussion

Even though open pyeloplasty remains the standard of treatment for UPJ obstruction management with success rates exceeding 90% [3,4], recent advances in laparoscopic surgery have led an increasing number of surgeons to adopt minimally invasive approaches. Laparoscopic pyeloplasty constitutes the ambitious counterpart of the open procedure with its first report dating back to 1993 [5] when Schuessler and co-workers reported on the feasibility of laparoscopic transperitoneal dismembered pyeloplasty in a series of five patients with UPJ obstruction. Since then, major advances in endoscopic techniques and surgical training have been made and larger series [4] have claimed success rates similar to that of the open approach, questioning its suitability as the standard of care. Major drawbacks in laparoscopic pyeloplasty utilization include its technical complexity and the duration of the operation. To this very day, the task of intracorporeal knot-tying renders laparoscopic pyeloplasty a challenging procedure, which is probably the reason why, within a decade, the largest series are up to 100 patients and are coming from high expertise centers [6].

Further to its widespread utilization in large series, laparoscopic pyeloplasty has been reported to be efficient in difficult cases such as persistent UPJ obstruction after failed open pyeloplasty and some kind of salvage endoscopic approach [7]. Bove and co-workers have also reported on the viability of the procedure in an 11-patient series with upper urinary tract abnormalities rendering them complex, one of whom was found to have a duplicated collecting system [8].

Despite the efficacy of laparoscopic pyeloplasty in UPJ obstruction in our patient, other techniques are also feasible. Kumar and colleagues [9] recently reported on the feasibility of laparoscopic pyeloureterostomy in a similar case with excellent results. This experience, along with other reports [10], indicate laparoscopic pyeloureterostomy as a viable alternative which should also be considered in cases of UPJ obstruction especially in incomplete duplicated collecting systems (also treating the yo-yo reflux presenting in these systems). Since our case involved a complete ureteral duplication without reflux and with normal upper moiety, a pyeloplasty was performed.

In addition to this series of reports we herein add a confirmation of laparoscopic pyeloplasty as a feasible option for management of adult UPJ obstruction in a completely duplicated collecting system. The case presented is novel in that it reports on the efficacy of laparoscopic pyeloplasty in the lower segment of a duplicated system in the presence of crossing vessels. In their report on UPJ obstruction management in a duplicated collecting system, Sahai and co-workers [2] did not confront crossing vessels pre- or intra-operatively. As with most authors, we preferred dismembered pyeloplasty (Hynes-Anderson) via a transperitoneal approach, the latter allowing easy identification and mobilization of intra-abdominal structures and adjacent viscera.

Further, compared to the report of Sahai and colleagues [2], our case is also different in that we confronted a completely normal upper moiety (versus a massively dilated upper and a less dilated lower moiety). In addition, Sahai et al. described an anastomosis near the confluence of the pelvic systems with an originating single ureter. In comparison, our case demonstrates an anastomosis in one of two completely independent pelvic systems. After surgery, the patient's subjective symptoms as well as imaging studies have significantly improved arguing in favor of the procedure's success. Postoperative course and final cosmetic result were also excellent, an issue of importance for a young female patient.

VI. Conclusion

In conclusion, we argue for the feasibility of laparoscopic pyeloplasty for UPJ obstruction management in a duplicated collecting system, also in the setting of co-existing crossing vessels. This report further supports the trend of endoscopic surgery utilization even in cases complicated by modified renal anatomy.

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